Analysis For Total Metals By EPA Method 200.8

Client ID:	M-01649B	Client:	Alaskan Copper Works
Date Received:	12/13/07	Project:	% of Acid, PO M01649, F&BI 712144
Date Extracted:	12/17/07	Lab ID:	712144-02 x10,000
Date Analyzed:	12/18/07	Data File:	712144-02.078
Matrix:	Aqueous	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125
Indium	92	60	125
Bismuth	95	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	21,700,000
Nickel	19,300,000
Copper	2,780,000
Zinc	78,000
Arsenic	22,900
Silver	<10,000
Cadmium	<10,000
Lead	22,100
Iron (screen)	76,900,000

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M-01649A	Client:	Alaskan Copper Works
Date Received:	12/13/07	Project:	% of Acid, PO M01649, F&BI 712144
Date Extracted:	12/17/07	Lab ID:	712144-01 x10,000
Date Analyzed:	12/18/07	Data File:	712144-01.077
Matrix:	Aqueous	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125
Indium	94	60	125
Bismuth	94	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	7,740,000
Nickel	11,000,000
Copper	5,510,000
Zinc	17,500
Arsenic	<10,000
Silver	<10,000
Cadmium	<10,000
Lead	12,900
Iron (screen)	49,400,000

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Alaskan Copper Works
Date Received:	Not Applicable	Project:	% of Acid, PO M01649, F&BI 712144
Date Extracted:	12/17/07	Lab ID:	I7-480 mb
Date Analyzed:	12/18/07	Data File:	I7-480 mb.056
Matrix:	Aqueous	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	102	60	125
Bismuth	100	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Nickel	<1
Copper	<1
Zinc	<1
Arsenic	<1
Silver	<1
Cadmium	<1
Lead	<1
Iron (screen)	<100

Date of Report: 12/26/07
Date Received: 12/13/07
Project: % of Acid, PO M01649, F&BI 712144
Date Extracted: 12/26/07
Date Analyzed: 12/26/07

RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR SPECIFIC GRAVITY @ 15.56 °C

Sample ID Laboratory ID	Specific Gravity
M-01649A 712144-01	1.12
M-01649B 712144-02	1.23

Date of Report: 12/26/07
Date Received: 12/13/07
Project: % of Acid, PO M01649, F&BI 712144
Date Analyzed: 12/26/07

RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR PERCENT ACID

Sample ID Laboratory ID	Percent Acid
M-01649A 712144-01	8.3
M-01649B 712144-02	8.1

Date of Report: 12/26/07
Date Received: 12/13/07
Project: % of Acid, PO M01649, F&BI 712144

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AQUEOUS SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 712132-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Chromium	ug/L (ppb)	8.69	8.53	2	0-20
Nickel	ug/L (ppb)	44.1	43.6	1	0-20
Copper	ug/L (ppb)	<1	<1	nm	0-20
Zinc	ug/L (ppb)	<1	<1	nm	0-20
Arsenic	ug/L (ppb)	36.6	36.0	2	0-20
Silver	ug/L (ppb)	<1	<1	nm	0-20
Cadmium	ug/L (ppb)	<1	<1	nm	0-20
Lead	ug/L (ppb)	<1	<1	nm	0-20

Laboratory Code: 712132-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chromium	ug/L (ppb)	20	8.69	54 b	50-150
Nickel	ug/L (ppb)	20	44.1	42 b	50-150
Copper	ug/L (ppb)	20	<1	47 vo	50-150
Zinc	ug/L (ppb)	50	<1	52	50-150
Arsenic	ug/L (ppb)	10	36.6	78 b	50-150
Silver	ug/L (ppb)	5	<1	75	50-150
Cadmium	ug/L (ppb)	5	<1	92	50-150
Lead	ug/L (ppb)	10	<1	98	50-150

Date of Report: 12/26/07
Date Received: 12/13/07
Project: % of Acid, PO M01649, F&BI 712144

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AQUEOUS SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	101	70-130
Nickel	ug/L (ppb)	20	96	70-130
Copper	ug/L (ppb)	20	95	70-130
Zinc	ug/L (ppb)	50	88	70-130
Arsenic	ug/L (ppb)	10	80	70-130
Silver	ug/L (ppb)	5	87	70-130
Cadmium	ug/L (ppb)	5	100	70-130
Lead	ug/L (ppb)	10	99	70-130

Date of Report: 12/26/07
Date Received: 12/13/07
Project: % of Acid, PO M01649, F&BI 712144

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AQUEOUS SAMPLES FOR SPECIFIC GRAVITY @ 15.56 °C

Laboratory Code: 712144-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Specific Gravity	1.12	1.13	0.3	0-2

Date of Report: 12/26/07
Date Received: 12/13/07
Project: % of Acid, PO M01649, F&BI 712144

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR PERCENT ACID

Laboratory Code: 712144-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Percent Acid	8.3	8.0	4	0-20

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probablility.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

December 26, 2007

DUPLICATE

INVOICE #07ACU1226-1

Accounts Payable
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

RE: Project % of Acid, PO M01649, F&BI 712144 - Results of testing requested by Gerry Thompson for material submitted on December 13, 2007.

2 samples analyzed for Total Chromium, Copper, Nickel, Zinc, Arsenic, Silver, Cadmium, Lead, and Iron by Method 200.8 @ $180 per sample	$ 360.00
2 samples analyzed for Specific Gravity @ $25 per sample	50.00
2 samples analyzed for Percent Acid Content @ $50 per sample	100.00
Amount Due	$ 510.00

FEDERAL TAX ID #(b) (6)

712144

SAMPLE CHAIN OF CUSTODY ME 12-13-07

AI4

AKC-000647

Send Report To Gerald Thompson
Company Alaskan Copper Works
Address 628 S. Hanford St
City, State, ZIP Seattle WA 98134
Phone # 206-571-6033 Fax # 206-382-4309

SAMPLERS (signature)

PROJECT NAME/NO.: % of Acid

PO #: M01649

REMARKS

Page # _____ of _____

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH _____
- Rush charges authorized by: _____

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	% of HNO3	Spec. Gravity	Cu-Cu-NE-ZN	As-Ag-Cd-Pb	FE	Notes
M-01649A	01	12/13/07	12:30	HNO3	1							X	X	X	X	X	
M-01649B	02	12/13/07	12:30	HNO3	1							X	X	X	X	X	

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Gerald Thompson	ACW	12/13/07	1:18pm
Received by:		Michael Erdahl	FEBruya	↓	↓
Relinquished by:					
Received by:					

Samples received at 18 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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December 26, 2007

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on December 13, 2007 from the % of Acid, PO M01649, F&BI 712144 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ACU1226R.DOC